PATENT SPECIFICATION

Application Date : Oct. 22, 1920. No. 29,924/20

173,123

Complete Accepted : Dec. 29, 1921.

COMPLETE SPECIFICATION.

Improvements in Atomizers.

I, ALICE LEVY (*née* SALOMON), of 54, quai de Boulogne, Boulogne sur Seine (Seine), France, a French citizen, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to atomizers having a rubber bulb, and has for its object to provide a device of very simple and economical construction, and at the same time reliable in working and convenient in use. More particularly the invention relates to that type of atomizer which is constructed entirely of glass or like material, the liquid container and the delivery tube being connected together by fusion of the latter to the base of the container, said tube being enlarged at its lower end and provided with an aperture through which the liquid passes from the container.

The invention consists in a vaporizer of the type last above mentioned, characterised by the feature that a raised neck is provided on the container for the purpose of carrying the bulb.

The invention also consists in providing the delivery tube fused or welded at the base of the container, with an enlarged portion at its lower part serving as a foot, said enlarged portion being pierced with a lateral hole communicating with the interior of the tube, said hole being disposed above the level where the delivery tube joins the base of the container.

Other features of the invention are hereinafter fully described and claimed.

The rubber bulb is made as simple as possible, inasmuch as it has no air inlet valve. The single neck whereby it is connected with the body of the atomizer is used both for the admission and delivery of air, and to effect this the section of the free passage provided around the delivery tube in the neck of the device is of sufficient size to allow the outer air to enter with a considerable speed through the neck and through the receptacle and to swell out the bulb immediately pressure applied thereon is released.

To facilitate the filling of the receptacle, it is advantageous to use a rubber tube, one end of which is fitted upon the delivery neck, while the other end is immersed in the liquid to be transferred to the container after pressing down the bulb. By allowing the bulb to swell out again in the natural manner, the liquid will be drawn by suction through the tube and will partly or entirely fill the receptacle. This operation may be repeated as desired, but care should be taken to place the atomizer in the upright position before again pressing the bulb, in order to expel only a negligible amount of liquid along with the air. Inasmuch as the bulb does not require to be removed from the receptacle for the purpose of filling the same, it may be mounted permanently upon its supporting neck.

By reason of its simple construction and the absence of all screw or like connections between the parts, an atomizer according to this invention may be readily and cheaply constructed, and even in small size for pocket use. In the latter case it is preferable to give the receptacle a flat or lenticular shape.

The accompanying drawing shows by way of example a constructional form of a pocket atomizer according to this invention.

[*Price* 1/-]

Figure 1 is a vertical axial section.

Figure 2 is a horizontal section on the line A—A, Figure 1.

1 indicates the liquid container or receptacle of the device, which has a flat shape and is provided at the top with a delivery neck 2, and at the side with a neck 3 having fitted thereon the neck 4 of the bulb 5. Within the container 1 is disposed the delivery tube 6 the upper part whereof is drawn out into a narrow shape and curved in such manner as to be situated approximately in the axis of the neck 2, the lower enlarged part thereof, which serves as a foot, being welded or fused to the bottom of said container. An orifice 7 is provided in said enlarged portion of the tube above the base of the container for the passage of the liquid to be atomized.

To construct a device of this kind, a container or receptacle of the desired shape having an aperture in the bottom thereof is employed on the one hand, and on the other hand a tube which is previously drawn out in narrow shape and provided with the lateral orifice 7; said tube is introduced into the receptacle through said aperture, and the lower end of the tube is welded or fused to the bottom of the receptacle in such manner as to close said tube at the same time. If the parts to be connected are constructed of glass, the connection is made by means of the blowpipe, but if they are of metal, the autogenous welding process may be employed in any suitable manner.

As above stated, the bulb does not contain an air admission valve. It is permanently secured to the neck 3 and is used for the filling operation. To effect this, a rubber tube 8, shown in dotted lines, is employed, the same being attached to the neck 2. The other end of said tube is immersed in the liquid to be transformed to the container while the bulb is kept pressed down, then the latter is allowed to fill out by reason of its elasticity, whereby the suction effect produced in the container will force the liquid to enter through the tube and the neck.

When the device is to be used for atomizing the liquid contained therein, each time the bulb is pressed down, the air which it contains is suddenly expelled into the receptacle and sets up a momentary pressure therein, which causes the liquid to rise through the tube 6, passing through the orifice 7. Upon leaving the tube 6 the liquid stream is atomized by the jet of air issuing from the neck 2. Upon releasing said bulb, the latter resumes its original shape by reason of its elasticity, and the outer air now enters through the neck 2 into the receptacle and the bulb until the atmospheric pressure is again established therein, this action being practically instantaneous by reason of the suitable space provided between the tube 6 and the walls of the neck 2.

The neck 2 may be closed after use by a suitable stopper cap consisting of a metal socket 9 connected with the neck 3 by a small chain 10 and containing a suitably hollowed cork cylinder 11. The bulb is preferably covered by the netting 12 in the usual manner.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. An atomizer of the type hereinbefore described, characterised by the feature that a raised neck is provided on the container for the purpose of carrying the bulb.

2. An atomizer as claimed in Claim 1, characterised by the feature that the delivery tube fused or welded at the base of the container is provided with an enlarged portion at its lower end serving as a foot, said enlarged portion being pierced with a lateral hole communicating with the interior of the tube, said hole being disposed above the level where the delivery tube joins the base of the container.

3. An atomizer as claimed in Claim 1, characterised in that said bulb is permanently secured to the neck of the container, the latter being filled through the delivery tube thereof.

4. An atomizer as claimed in Claim 1, characterised by a stopper connected by chain with the neck of the container and adapted to fit upon said delivery tube.

5. The improved atomizer, substantially as hereinbefore described with reference to the accompanying drawing.

Dated this 22nd day of October, 1920.

MARKS & CLERK

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1922

[This Drawing is a full size reproduction of the Original.]

fig. 1

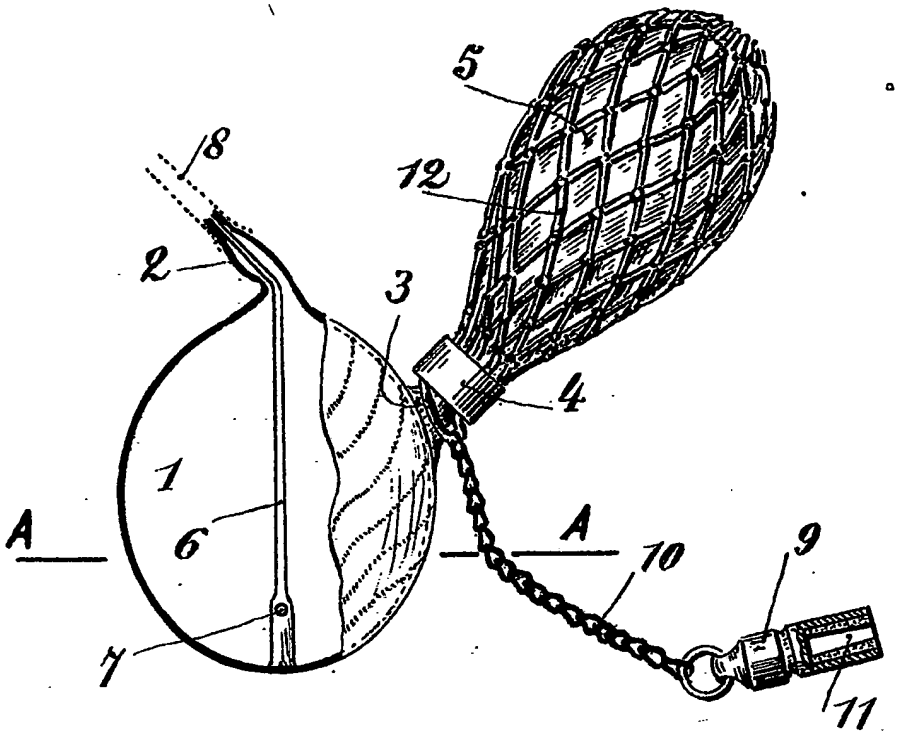
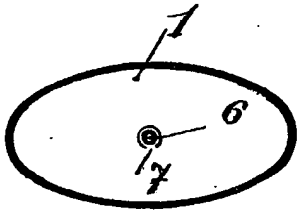


fig. 2



Malth. & Sons, Photo-Litho